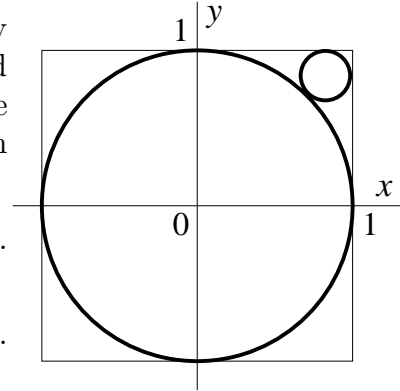


Problem statement The square to the right is bounded by the lines $x = 1$, $y = 1$, $x = -1$, $y = -1$. The circle inscribed in the square is the unit circle $x^2 + y^2 = 1$. Let C be the circle in the upper right hand corner, inscribed in the region bounded by the lines $x = 1$, $y = 1$, and the unit circle.



- a) If r is the radius of C , find the center of C in terms of r . (*Suggestion: C is tangent to the lines $x = 1$ and $y = 1$.*)
- b) Find the distance of the center of C to $(0, 0)$ in terms of r . (*Suggestion: C is tangent to the unit circle.*)
- c) Find r using a) and b), or with some other method.